

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claims 1-62 (Cancelled)

Claim 63 (Currently Amended) A device for stabilization of adjacent vertebrae of a spine, the device comprising:

a bone plate;

a plurality of bores in the bone plate each configured to receive a bone anchor extending therethrough;

a pair of spaced, flat portions of one of the bores that extend substantially parallel to one another and which are spaced by a predetermined fixed distance;

an anchor lock collar member for being rotatably received in ~~one of the~~ one bore[[s]];

~~an small diameter,~~ upper portion of the anchor lock collar member having notches spaced circumferentially thereabout for receiving a driving tool therein to rotate the anchor lock collar member in the one bore;

~~a larger diameter,~~ lower portion of the anchor lock collar member having a split-ring construction so that the anchor lock lower portion has facing circumferential ends that are spaced apart from one another; ~~and~~

a larger dimension and a smaller dimension of the anchor lock lower portion having respective axes that extend through a center of the split ring anchor lock collar member substantially orthogonal to each other with the larger dimension being greater than the predetermined fixed distance and the smaller dimension being less than the predetermined fixed distance; and

cooperating inner and outer surfaces of the one bore flat portions and the anchor lock lower portion respectively, which cause the facing ends to shift toward each other with approximately ninety degrees of rotation of the anchor lock collar member from an open, bone anchor receiving configuration with the larger dimension axis oriented to be substantially parallel to the bore flat portions to a clamped, bone anchor locking configuration with the larger dimension axis oriented to be substantially perpendicular to the bore flat portions so that a bone anchor extending through the one bore and the anchor lock collar member therein is locked in the one bore against back out therefrom.

Claim 64 (Currently Amended) The device of claim 63 wherein the anchor lock lower portion includes two substantially flat surfaces that are diametrically opposed to one another along the larger dimension axis and each about ~~the inner bore surface~~ a bore flat portion when the anchor lock collar member is in the clamped, bone anchor locking configuration to resist anchor lock rotation away from the bone anchor locking configuration.

Claim 65 (Currently Amended) The device of claim 64 wherein each substantially flat surface is adjacent an anchor lock camming surface so that when the anchor lock collar member is rotated between the bone anchor receiving and locking configurations, the transition between the anchor lock camming surfaces camming against the ~~inner bore surface~~ bore flat portions and the anchor lock substantially flat surfaces abutting the ~~inner bore surface~~ bore flat portions provides tactile feedback to a surgeon that the anchor lock has been shifted to the locking ~~position~~ configuration.

Claim 66 (Cancelled)

Claim 67 (Currently Amended) The device of claim 63 wherein the facing circumferential ends are oriented on the anchor lock collar member in a position that generally

avoids contact with the ~~inner bore surface~~ bore flat portions so as to minimize hang-ups when the anchor lock is rotated between bone anchor receiving and locking configurations.

Claim 68 (Previously Presented) The device of claim 63 wherein the facing circumferential ends of the anchor lock collar member form a gap spacing that is positioned in a predetermined location when the anchor lock collar member is shifted to the bone anchor locking configuration to allow a surgeon to visually recognize when the anchor lock has been rotated to the locking configuration.

Claim 69 (Previously Presented) The device of claim 63 wherein the anchor lock collar member has a concave inner surface that compresses around a convex surface of the bone anchor when the anchor lock rotates toward the clamped, bone anchor locking configuration.

Claim 70 (Previously Presented) The device of claim 63 wherein the bone plate is one of a titanium, stainless steel, and PEEK material.

Claim 71 (Currently Amended) A device for stabilization of adjacent vertebrae of a spine, the device comprising:

- a bone plate;

- a plurality of bores in the bone plate configured to each ~~to~~ receive a bone screw extending therethrough;

- at least one of the bores being a dynamized bore having an elongate configuration to allow a bone screw extending therethrough and into a vertebrae to shift relative to the bone plate; a pair of opposed flat portions of the dynamized bore which extend along the length thereof;

- a screw lock member configured to be rotatably received in the dynamized bore for being rotated between a screw receiving unlocked configuration and a screw locking configuration; and

a pair of diametrically opposed outer flats of the screw lock member which face radially outward therefrom; and

a substantially smooth inner surface of the screw lock member having an inner diameter sized in clearance with the bone screw when in the screw receiving unlocked configuration, wherein rotation of the screw lock member to the screw locking configuration brings the flats into confronting relation with the opposed bore flat portions which with the inner diameter being substantially uniformly ~~reduced~~ reduces the inner diameter in size ~~when the screw lock member is rotated to the screw locking configuration~~ so that the smooth inner surface provides a uniform clamping force about the bone screw ~~to~~ and the flats are configured to slide along the bore flat portions to permit ~~allow~~ relative translation ~~thereof of the bone screw and the screw lock member~~ in the dynamized bore ~~and while keeping~~ the bone screw from backing out therefrom.

Claim 72 (Currently Amended) The device of claim [[72]] 71 wherein the rotatable screw lock member has a larger dimension and a smaller dimension, the larger dimension being brought to bear against ~~a recess located in the dynamized bore~~ the bore flat portions upon rotation of the screw lock member from the screw receiving configuration to the screw locking configuration which shortens the larger dimension and causes the screw lock member to constrict about the bone screw.

Claim 73 (Currently Amended) The device of claim 72 wherein the dynamized bore ~~recess~~ has both minor and major axes and the larger dimension of the screw lock member is aligned with the major axis of the ~~recess~~ bore when the screw lock member is in the screw receiving configuration and the minor axis when the screw lock member is in the screw locking configuration.

Claim 74 (Currently Amended) The device of claim 72 wherein the substantially smooth inner surface of the screw lock member conforms to a corresponding surface on the bone screw, the screw lock member inner surface and the corresponding surface on the bone screw having a

greater coefficient of friction than ~~the larger dimension of the rotatable screw lock member and the dynamized bore~~ recess a coefficient of friction between the flats of the screw lock member and the bore flat portions to permit dynamization of the rotatable screw lock member within the bore without loosening engagement of the screw lock member about the bone screw.

Claim 75 (Currently Amended) A bone plate system for securing a plurality of bones in a desired alignment, the bone plate system comprising:

a bone plate having a top surface and a bottom surface;

a plurality of bores extending through the plate which receive bone anchors for securing the plate to the plurality of bones;

a channel of one of the bores, the channel being located between the top and bottom surfaces of the plate and having upper and lower surfaces extending radially outward from the bore;

a locking collar configured for being received in the one of the bore[[s]];

a step portion of the locking collar having a thicker portion and a thinner portion; and

an upwardly facing cam surface extending between the thicker and thinner portions of the locking collar step portion configured for camming against ~~a cooperating downwardly facing the channel upper surface in the bore~~ so that rotation of the locking collar toward a locked configuration thereof brings the locking collar cam surface into engagement with the channel upper surface which causes a tight wedge fit of the ~~collar in the one bore~~ step portion thicker portion in the channel to avoid reverse rotation back toward an unlocked configuration of the collar in the bore.

Claim 76 (Currently Amended) The bone plate system of claim 75 wherein the upwardly facing cam surface of the locking collar ~~includes is~~ a ramp disposed between ~~a lower height and a higher height, the higher height restricting reverse rotation of the locking collar back toward the unlocked configuration~~ the thicker and thinner portions of the locking collar.

Application No. 10/553,940
Amendment dated July 15, 2009
Reply to Office Action of April 15, 2009

Claim 77 (Currently Amended) The bone plate system of claim 75 wherein the ~~upwardly facing cam surface~~ thicker portion of the locking collar has a projection that mates with the ~~downwardly facing bore channel upper~~ surface to restrict return rotation of the locking collar.

Claim 78 (New) The device of claim 71 wherein the screw lock member includes outer curved surfaces and junctures between the curved surfaces and the flats, the junctures being diametrically opposed across the screw lock member and separated by a distance that is greater than the distance between the diametrically opposed flats of the screw lock member such that the junctures resist rotation of the screw lock member toward the unlocked configuration.